



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,017	01/30/2004	Takeo Tanaami	082726A	7966
38834 7590 11/03/2009 WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036				
EXAMINER				
WRIGHT, PATRICIA KATHRYN				
ART UNIT		PAPER NUMBER		
1797				
NOTIFICATION DATE		DELIVERY MODE		
11/03/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

## Office Action Summary

**Application No.**

10/769,017

**Applicant(s)**

TANAAMI, TAKEO

**Examiner**

P. Kathryn Wright

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 33 and 36-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33, 36-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- \_\_\_\_\_ Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- \_\_\_\_\_ Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Status of the Claims***

1. This action is in response to papers filed August 03, 2009 in which claims 33 and 36-38 were amended and claim 35 was canceled. The amendments have been thoroughly reviewed and entered. Any objection/rejection not repeated herein has been withdrawn by the Office.

Claims 33 and 36-38 are under prosecution.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36 recites wherein the spectroscopic information is separated from noise. The claims are directed to an apparatus (i.e., biochip reader). No structural element is recited in this claim, only a method of processing the spectroscopic information. Moreover, there is no means for performing this method. Apparatus claims must be structurally distinguishable from the prior art. See MPEP 2114.

Clarification and/or correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1797

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 33 and 36-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogino (US Patent no. 5,422,712).

Ogino discloses a biochip reader for reading image data of a plurality of biological samples provided a flat flow in a two dimensional manner on the surface of a biochip (flow cell 16), see Fig. 10.

Specifically, Ogino teaches a biochip reader comprising a light source 10 for irradiation excitation light simultaneously on the plurality of samples (particles) in the flow cell and causing the cells to emit fluorescent light different in wavelength from the excitation light (see embodiment of Fig. 10 and col. 8, line 53- col. 9, line 19).

The Ogino biochip reader includes a single optical detector 70 for detecting a plurality of fluorescent light emitted by the plurality of samples (particles) as spectroscopic information (see Fig. 10).

Ogino also teaches a dichromatic mirror 24. The dichromatic mirror meets the limitation of the "means" in claim 33. Nevertheless, Ogino also teaches a spectroscopic means 28 comprising a prism, a lattice (grating) disposed between the sample and the optical detector 70 that causes the fluorescent light emitted by the samples to be separated and developed by a processor 72 as spectroscopic information at different

locations according to wavelength and detected by the optical detector at the different locations on the single optical detector 70.

For the purposes of examination, the recitation to the plurality of biological sample provided as spots or an array in a two dimensional manner on a surface of a biochip has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the structural limitations to the biochip reader are able to stand alone.

Moreover, even if the plurality of samples are positively recited in the claim it would not serve to patentably distinguish the device since the inclusion of material worked upon by a structure being claimed is of no significance in determining patentability of an apparatus claim. See MPEP 2115.

Similarly, the recitation wherein the biochip reader is a microscope selected from the group consisting of a scanning confocal optical system, a non-scanning confocal optical system, and a 2-photon excitation optical system has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Nevertheless, Ogino teaches a

microscope (i.e., scanning confocal optical system) for fluorescence measurements (see Fig. 10).

As to claim 36, the biochip reader of Ogino also includes an image intensifier 30 which separates the spectroscopic information from noise using spectra and regression method.

Regarding claim 37, Ogino teaches a slit or aperture 68 (see col. 8, lines 53 et seq. and Fig. 10)

With respect to claim 38, Ogino teaches flat flow 64 of sample in the flow cell (see col. 8, line 53 et seq.) Thus, light source of Ogino comprises means for directing the excitation light to be irradiated onto the outside of the flow cell which is opposite to the interior side wherein the plurality of samples (particles) are arranged.

6. Claims 33 and 36-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Kauvar et al. (US Patent no. 6,492,125), hereinafter "Kauvar".

Kauvar discloses a biochip reader for imaging data of a plurality of samples provided as spot or an array in two dimensional manner on a surface of biochip (XYZ microscope stage in Fig. 1).

Specifically, Kauvar teaches a biochip reader comprising:

a light source (ARC lamp) for irradiating excitation light simultaneously on the plurality of samples on the biochip surface and for causing the sample to emit fluorescent light different in wavelength from the excitation light;

a single optical detector (CCD array) for detecting a plurality of fluorescent light emitted by the plurality of samples as a spectroscopic information at different location

according to wavelength and to be detected by the single optical detector in a two dimensional manner at different locations on the single optical detector; and

a means which comprises a polychromatic mirror (i.e., dichromatic mirror), see Fig. 1. Note given the alternative language of claim 33, the mirror of Kauvar meets the limitation of the "means" in the claim. Nevertheless, Kauvar also teaches a grating and Fourier spectrometer (see col. 2, lines 61-65). Thus, a single optical detector may be employed using appropriate filters or other means, such as a prism or grating, to permit a single detector to perceive separately multiple signals, such as different wavelength ranges, see for example, col. 2, line 54 et seq.

The recitation wherein the biochip reader is a microscope selected from the group consisting of a scanning confocal optical system, a non-scanning confocal optical system, and a 2-photon excitation optical system has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Nevertheless, the apparatus depicted by Kauvar in Figure 1 comprises a microscope (i.e., scanning confocal optical system) for fluorescence measurements.

Regarding claims 36-37, the biochip reader of Kauvar separates the spectroscopic information from noise using known spectra and regression method and an aperture (see col. 8, lines 20 et seq.)

Please note, that the sample is not positively recited in the claims. Moreover, even if the plurality of samples arranged in an array are positively recited in the claim it would not serve to patentably distinguish the device since the inclusion of material worked upon by a structure being claimed is of no significance in determining patentability of an apparatus claim. See MPEP 2115.

As to claim 38, Kauvar teaches a biochip formed from a transparent substrate to allow passage of the excitation light and the fluorescent light, wherein the excitation light is irradiated from the bottom side of the biochip (XYZ Microscope Stage) opposite the top side on which the plurality of samples are disposed (see Fig. 1.)

### ***Response to Arguments***

7. Applicant's arguments filed August 03, 2009 have been fully considered but they are not persuasive.

In response to the previous rejection of claims 33 and 35-38 under 35 U.S.C. 102(b) as being anticipated by Ogino (US Patent no. 5,422,712), Applicant argues that the samples and images of spectroscopic information falling on a photosensor 70 are limited to a detection area having a width covering one sample particle and images on the entire are of a two dimensionally provided flat sample liquid flow 64 cannot be observed at the same time.



The Examiner respectfully disagrees. As discussed above, Ogino teaches in the apparatus shown in Fig. 10, a biochip reader (scanning confocal optical system) comprising a light source 10 for irradiation excitation light simultaneously on the plurality of samples (particles) in the flow cell and causing the cells to emit fluorescent light different in wavelength from the excitation light (see embodiment of Fig. 10 and col. 8, line 53- col. 9, line 19). The Ogino biochip reader includes a single optical detector 70 for detecting a plurality of fluorescent light emitted by the plurality of samples (particles) as spectroscopic information (see Fig. 10). FIG. 11 of Ogino is a magnified view of the essential parts in FIG. 10. Ogino teaches since the sample liquid flow 64 is a flat flow that flows in the Y-direction, the number of particles to be analyzed can be increased (i.e., in the X-direction). By using a two-dimensional image sensor 70 in Ogino a spectral distribution diagram for each point in the X-direction may be obtained. Ogino teaches the fluorescent spectrum from the cell can be measured in the entire measuring region (i.e., two dimensionally provided flat sample flow area) by processing the signal obtained from the light receiving element 70 by the signal processor 72 the wavelength of the fluorescence emitted simultaneously from a plurality of cells can be measured. See col. 3, lines 19-39 and col. 8, line 53- col. 9, line 19.

Applicant also merely states that Ogino does not disclose that spectroscopic information (spectral image) is arranged between the images of the sample.

The Examiner notes that the features upon which applicant relies (arrangement of the biochip that creates spectroscopic information arranged between the plurality of

images of samples so that the information is not overlapped) is not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to the previous rejection of claims 33 and 35-38 under 35 U.S.C. 102(e) as being anticipated by Kauvar (US Patent no. 6,492,125), Applicant argues that Kauvar has no means for varying the position of the spectroscopic information to allow images of the spectroscopic information to fall on different positions of an optical detector (CCD).

The Examiner respectfully disagrees. First, it is noted there is no "means for varying the position" recited in the rejected claims. Applicant is again reminded that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In addition, Kauvar teaches using a grating and Fourier spectrometer when a single detector is employed to permit the detector to perceive separately multiple singles, such as different wavelength ranges (see col. 2, lines 61-65). The grating and Fourier spectrometer allow images of the spectroscopic information to fall on different positions of an optical detector (CCD).

Therefore, for the reasons delineated above, all pending claims remain rejected.

### ***Conclusion***

8. No claims are allowed.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to P. Kathryn Wright whose telephone number is (571)272-2374. The examiner can normally be reached on Monday thru Thursday, 9 AM to 6 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Art Unit: 1797

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. Kathryn Wright/  
Examiner, Art Unit 1797